

What is Claimed is:

1. A data compression system for compressing and decompressing data transported via a communications channel, comprising:

5 a compression encoder allowing said data to be transmitted in a compressed mode through said communications channel; and

a decompression decoder allowing said data to be reconstructed after being sent through said communications channel, wherein the value of an escape character that is used to indicate the beginning of a command when in transparent mode is not modified during data compression and decompression.

10

2. A data compression system as claimed in claim 1, wherein said data passes through said encoder and said decoder uncompressed in a transparent mode.

3. A data compression system as claimed in claim 2, wherein the value of said escape character is modified when encountered while in said transparent mode.

15

4. A data compression system as claimed in claim 2, wherein a command follows an escape character when in said transparent mode.

5. A data compression system as claimed in claim 3, wherein said escape character is initialized at zero and is modified 51 modulo 256 upon encountering said escape character in said transparent mode.

20

6. A data compression system as claimed in claim 4, wherein a parameter mode may be entered from said transparent mode upon sending an 'Enter Parameter Mode' command from said encoder to said decoder wherein parameter negotiation between said encoder and said decoder can occur without disrupting said communication channel.

25

7. A data compression system as claimed in claim 6, wherein said parameter negotiation determines whether data is transmitted in a transmit direction, a receive direction, in both transmit and receive directions, or in neither direction.

30

8. A data compression system as claimed in claim 6, wherein said parameter negotiation comprises a selected dictionary size for the transmit and the receive directions.

35

9. A data compression system as claimed in claim 6, wherein said parameter negotiation comprises a proposed maximum string length for the transmit and the receive directions.

10. A data compression system as claimed in claim 6, wherein parameter negotiation
5 comprises a proposed length of history for the transmit and the receive directions.

11. A data compression system for compressing and decompressing data transported via a communications channel, comprising:

a compression encoder allowing said data to be transmitted in a compressed mode
10 through said communications channel; and

a decoder allowing said data to be reconstructed after being sent through said communications channel in said compression mode, wherein said encoder and said decoder are selectively operable in any of a compression mode wherein said data is compressed before it is sent through said communication channel, a transparent mode wherein said data is not
15 compressed before transmission via said communication channel, and a parameter mode wherein negotiation of data compression parameters can occur.

12. A data compression system as claimed in claim 11, wherein parameter mode is entered only from transparent mode.
20

13. A data compression system as claimed in claim 11, wherein said negotiation of data compression parameters occurs in the absence of tearing down and re-establishing said communication channel.

25 14. A data compression system as claimed in claim 13, wherein said parameter negotiation determines whether said data is transmitted in a transmit direction, a receive direction, in both transmit and receive directions, or in neither direction.

15. A data compression system as claimed in claim 13, wherein said parameter negotiation
30 comprises a selected dictionary size for the transmit and the receive directions.

16. A data compression system as claimed in claim 13, wherein said parameter negotiation comprises a proposed maximum string length for the transmit and the receive directions.

17. A data compression system as claimed in claim 13, wherein said parameter negotiation comprises a proposed length of history for the transmit and the receive directions.

18. A data compression system as claimed in claim 11, wherein an escape character, which
5 is used to indicate that a command will follow, followed by a command is communicated via said communication channel prior to switching from said transparent mode to said parameter mode and switching from said transparent mode to said compression mode.

19. A data compression system as claimed in claim 11, said encoder and said decoder each
10 further comprise a dictionary of data and their compressed equivalents, wherein said decoder dictionary is not updated while said data compression system is in transparent mode.

20. A data compression system as claimed in claim 11, said encoder and said decoder each
15 further comprise a dictionary of data and their compressed equivalents, wherein each said dictionary is re-initialized when said data compression system switches from transparent mode to compression mode.

21. A method for negotiating data compression parameters in a data compression system
20 without interrupting a communication channel over which compressed data is transmitted, said data compression system comprising an encoder at one end of said communication channel capable of compressing data and a decoder at the other end of said communication channel capable of decompressing data, said method comprising the steps of:

transmitting data over said communication channel in a compressed mode, wherein
said encoder compresses said data to be sent along said communication channel and said
25 decoder decompresses said data;

switching said data compression system to a transparent mode wherein said encoder
continues to compress data but sends the data transparently along said communication
channel to said decoder;

transmitting data over said communication channel in an uncompressed format
30 wherein said decoder is transparent to said data;

switching said data compression system to a parameter mode;

negotiating data compression parameters in said parameter mode between said
encoder and said decoder;

switching said data compression system back to said transparent mode; and

switching said data compression system back to said compressed mode allowing data to be transmitted over said communication channel in a compressed format.

22. A method as claimed in claim 21, the step of switching said data compression system to a transparent mode further comprises the steps of sending an enter transparent mode control code from said encoder to said decoder.

23. A method as claimed in claim 21, wherein said step of switching from said transparent mode back to said compressed mode comprises the steps of:
10 sending an escape character from said encoder to said decoder; and
sending an enter compress mode command from said encoder to said decoder.

24. A method as claimed in claim 21, wherein said step of switching from said transparent mode to said parameter mode comprises the steps of:
15 sending an escape character from said encoder to said decoder; and
sending an enter parameter mode command from said encoder to said decoder.

25. A method as claimed in claim 21, wherein said step of switching from said transparent mode back to said compressed mode comprises the step of re-initializing a dictionary in each
20 of said encoder and said decoder.

26. A method as claimed in claim 21, wherein said step of transmitting data over said communication channel in a compressed mode is accomplished without modification of the value of the escape character, a variable used to indicate that a command will follow.

25 27. A method as claimed in claim 21, wherein said step of transmitting data over said communication channel in an uncompressed format wherein said encoder and said decoder are transparent to said data further comprises modifying the value of the escape character, a variable used to indicate that a command will follow, when the escape character is
30 encountered.

28. A method as claimed in claim 27, wherein said escape character is modified by incrementing said escape character by 51 modulo 256.

29. A method as claimed in claim 21, wherein said step of negotiating data compression parameters in said parameter mode between said encoder and said decoder comprises establishing whether or not data is to be sent in a transmit direction, a receive direction, both directions, or neither direction.

5

30. A method as claimed in claim 21, wherein said step of negotiating data compression parameters in said parameter mode between said encoder and said decoder comprises proposing a number of codewords in a transmit direction and a receive direction.

10 31. A method as claimed in claim 21, wherein said step of negotiating data compression parameters in said parameter mode between said encoder and said decoder comprises proposing the maximum string length in a transmit direction and in a receive direction.

15 32. A method as claimed in claim 21, wherein said step of negotiating data compression parameters in said parameter mode between said encoder and said decoder comprises proposing the length of history for a transmit direction and a receive direction.

20 33. A method as claimed in claim 21, wherein the step of switching said data compression system back to said transparent mode from said parameter mode comprises sending an end parameter command from said encoder to said decoder.